

WHAT IS CLAIMED IS:

1. A catalytic reforming process having a first catalytic zone in a lead position followed by a second catalytic zone in a lag position to produce a conversion resulting in a net hydrogen product stream wherein the process comprises:
 - 5 (a) operating the first catalytic zone at a first inlet temperature; and
 - (b) operating the second catalytic zone at a second inlet temperature that is less than the first inlet temperature and achieved in a heater that is operated below its maximum heating capacity to obtain a net hydrogen product stream.
2. The process of claim 1 wherein the catalytic reforming process comprises three
10 reforming zones in series.
3. The process of claim 1 wherein the catalytic reforming process comprises four reforming zones in series.
4. The process of claim 1 wherein the reforming process is operated at conditions including a pressure from about 270 kPa (25 psig) to about 1480 kPa (200 psig), a
15 temperature from about 450°C (842°F) to about 550°C (1022°F), a hydrogen to hydrocarbon mole ratio from about 1 to about 5 and a liquid hourly space velocity from about 0.5 to about 4 hr⁻¹.
5. The process of claim 1 wherein the second inlet temperature is operated at a temperature of at least 5°C (9°F) less than the first inlet temperature.

6. The process of claim 1 wherein the second inlet temperature is operated at a temperature in the range from about 5°C (9°F) to about 20°C (36°F) less than the first inlet temperature.

7. A catalytic reforming process having a plurality of catalytic zones in series
5 having a first catalytic zone in a lead position followed by a second catalytic zone in a lag position to produce a conversion resulting in a net hydrogen product stream wherein the process comprises:

(a) operating the first catalytic zone at first inlet temperature to thereby
reduce the concentration of carbon monoxide in the net hydrogen product
10 stream; and

(b) operating the second catalytic zone at a second inlet temperature that is
less than the first inlet temperature and achieved in a heater that is operated
below its maximum heating capacity to obtain a net hydrogen product stream.

8. The process of claim 7 wherein a net hydrogen product stream contains from
15 about 0.1 to about 20 vppm carbon monoxide.

9. The process of claim 7 wherein reforming process is operated at conditions
including a pressure from about 270 kPa (25 psig) to about 1480 kPa (200 psig), a
temperature from about 450°C (842°F) to about 550°C (1022°F), a hydrogen to
hydrocarbon mole ratio from about 1 to about 5 and a liquid hourly space velocity
20 from about 0.5 to about 4 hr⁻¹.

10. The process of claim 7 wherein the last catalytic zone inlet temperature is operated at a temperature in the range from about 5°C (9°F) to about 20°C (36°F) less than the remaining upstream catalytic zone inlet temperatures.

11. A catalytic reforming process having four catalytic zones in series to produce a conversion resulting in a net hydrogen product stream wherein the process comprises:

(a) operating the first three catalytic zones at similar operating inlet temperatures to thereby reduce the concentration of carbon monoxide in the net hydrogen product stream; and

(b) operating the fourth catalytic zone located in the lag position at an inlet temperature that is 5°C (9°F) to about 20°C (36°F) less than the three lead catalytic zones and achieved in a heater that is operated below its maximum heating capacity to obtain the net hydrogen product stream.

12. The process of claim 11 wherein the net hydrogen product stream has a reduced concentration of carbon monoxide from about 0.1 to about 20 vppm carbon monoxide.

13. The process of claim 11 wherein reforming process is operated at conditions including a pressure from about 270 kPa (25 psig) to about 1480 kPa (200 psig), a temperature from about 450°C (842°F) to about 550°C (1022°F), a hydrogen to hydrocarbon mole ratio from about 1 to about 5 and a liquid hourly space velocity from about 0.5 to about 4 hr⁻¹.